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a plurality of the components prior to a component mounting operation.

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Sub
E3* 19. A component mounting apparatus according to claim 8, wherein the board is positioned by a board positioning section so as not to move the board during the mounting of the components. --

REMARKS

Please enter the above amendments prior to reconsidering the merits of the present application. The following comments are presented for the Examiner's consideration.

In the Office Action of September 24, 1999, claims 8-11 are rejected over Dornes (U.S. Patent No. 4,573,262) in view of Japanese Reference No. 3-30499 (hereinafter JP '499). And, claims 12-15 are rejected over Dornes in view of JP'499 and further in view of Oyama (U.S. Patent No. 5,115,559).

Dornes discloses heads 38 and 40, and each head in turn is first placed in a pick-up position where it picks up a single connector 56 (component). The head then is translated to a predetermined position over board 8, where the pins of the connector are inserted into holes in the board. See col. 3, line 65 to col. 4, line 29 of Dornes.

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JP '499 discloses that a transfer head 10 has a nozzle 17 which holds a chip by suction. The nozzle moves the chip to a position where it is mounted on a board.

Clearly, neither Dornes or JP '499 discloses or suggests a mounting head which is capable of picking up a plurality of components and successively mounting the plurality of picked-up components. As described above, the mounting heads disclosed in Dornes and JP '499 pick up one component at a time, and then mount the component before the next component is picked up.

Oyama teaches that a head is rotated around a fixed axis. However, Oyama does not teach or suggest a head that is by itself horizontally movable. Also, Oyama discloses that one component is picked up, and the picked-up component is mounted, and then another component is picked up and then mounted. In other words, Oyama does not discloses or suggest that a specified number of components are picked up and then the picked-up components are mounted.

The present invention, as defined in claim 8, requires that the head moves after picking up the plural components, and then mounts the plural picked-up components. The present invention, as defined in claim 18, requires a plurality of nozzles for successively picking up the plural components and successively mounting the plural picked-up components.

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Further, Dornes and JP '499 disclose component mounting apparatuses in which each individual head is moved horizontally, while Oyama discloses a component mounting apparatus in which the head is merely rotated, i.e. the head does not move horizontally. Therefore, the teaching of Oyama would have no application in the environments of Dornes or JP '499. Even assuming, arguendo, that the references could be combined, the resulting combination still would not meet each and every limitation of claims 8 and 18 as demonstrated above.

Further, claims 12 and 18 require that the head has a plurality of nozzles. In Dornes it is not possible to have a plurality of nozzles because the insertion head has defining legs 72 for mechanically picking up a connector (see Figs. 5-6).

Further, in each of the Dornes and Oyama devices the board is moved during the mounting operation, while in the JP '499 device the board is not moved during the mounting operation. In contrast, in the present invention as defined in claim 19, the board is positioned by a board positioning section (24) such that the board is not moved during the component mounting operation.

In view of the above, it is submitted that claims 8-15 and 18-19 are clearly allowable over the prior art of record.

Respectfully submitted,

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